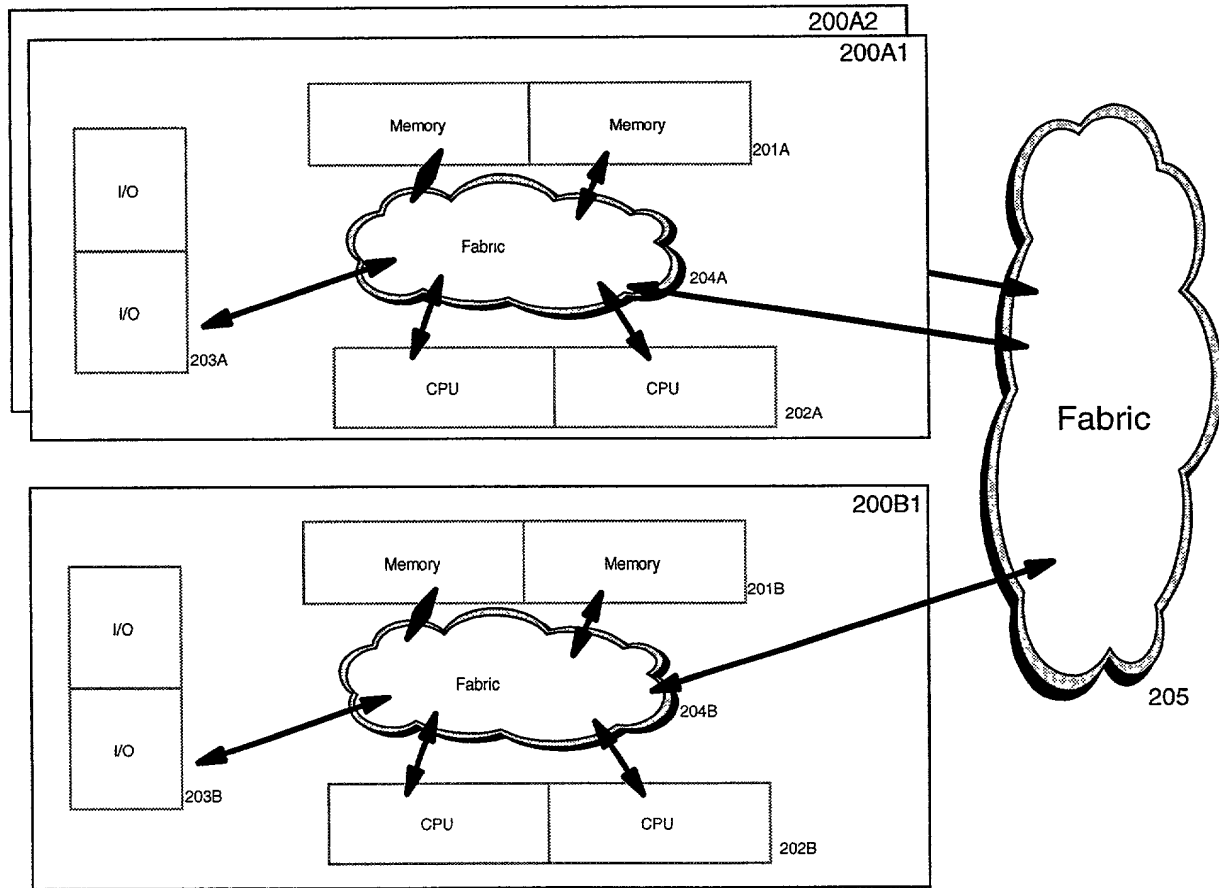
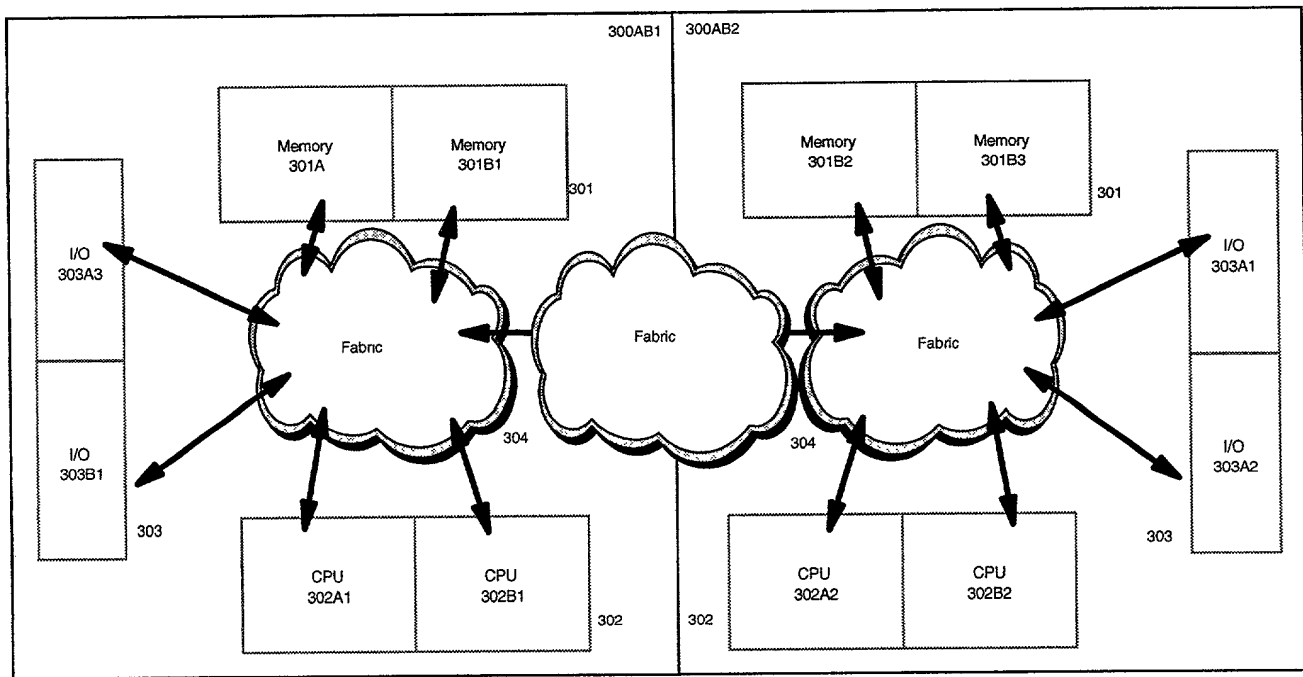


Fig 1

**Fig 2**

**Fig 3**

Virtualization allows sharing of CPUs and I/O elements by multiple partitions

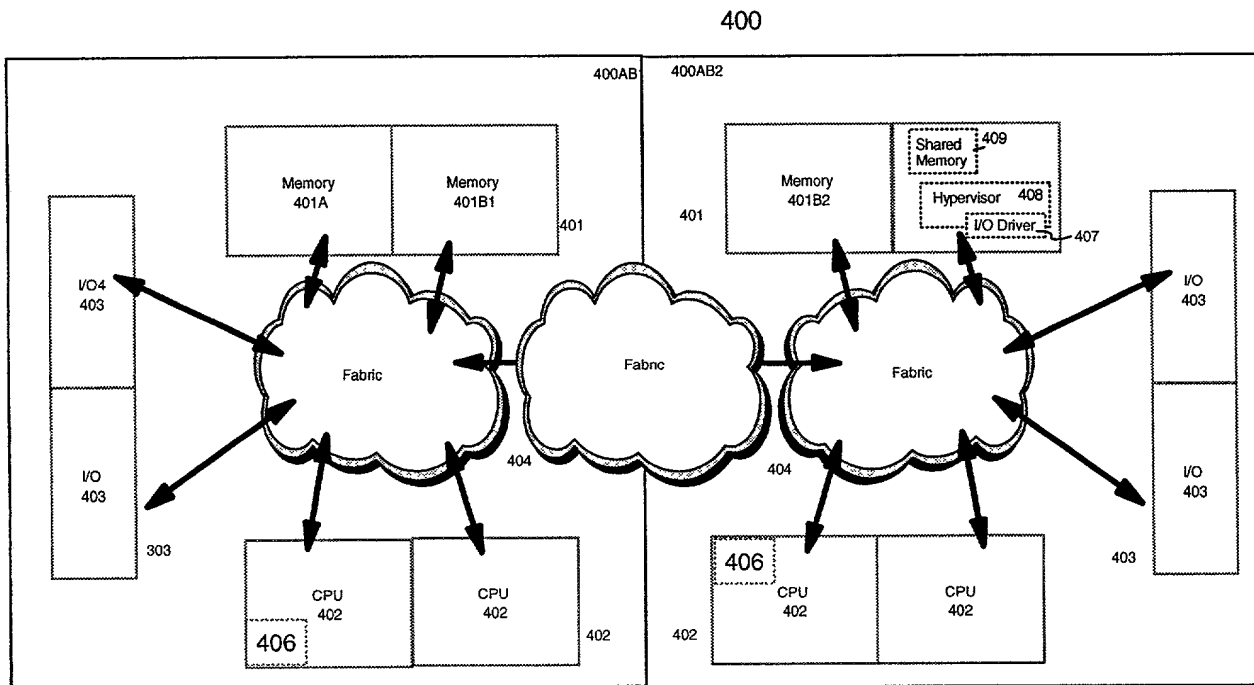
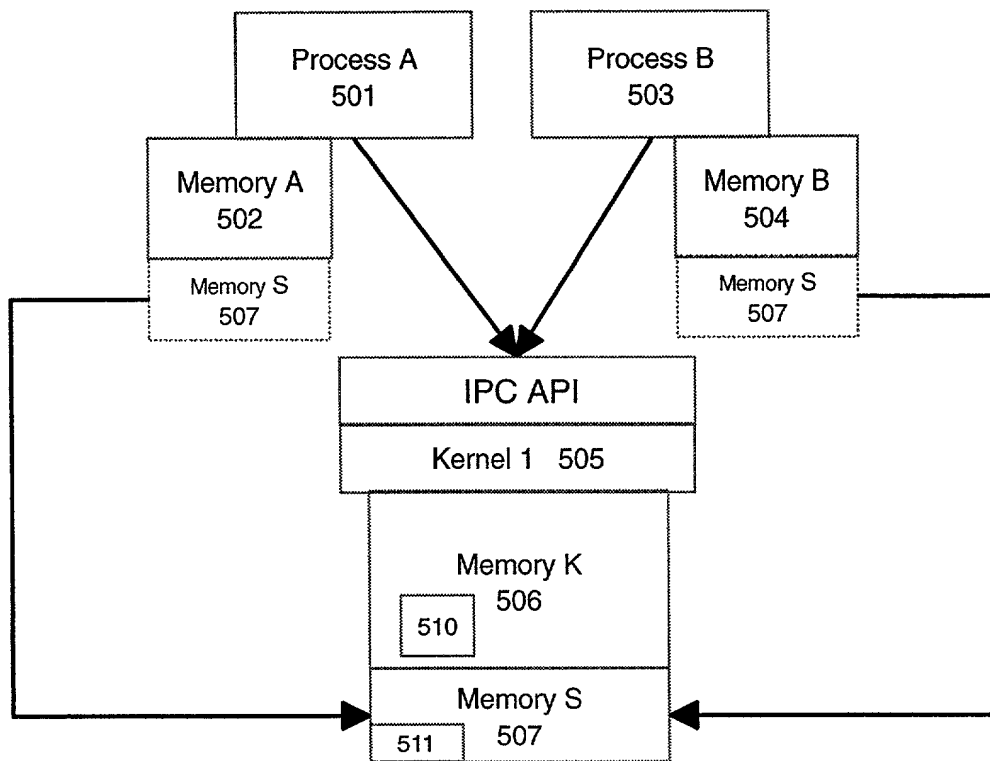
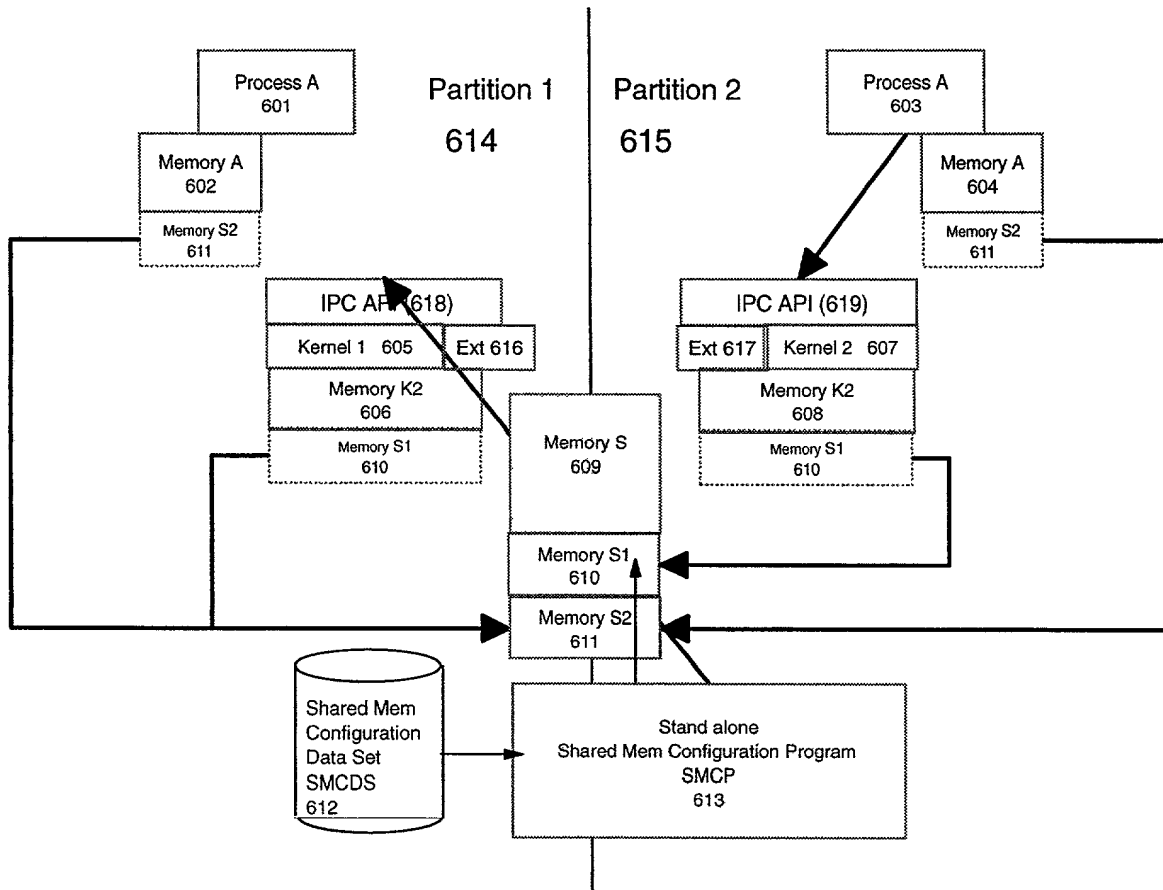
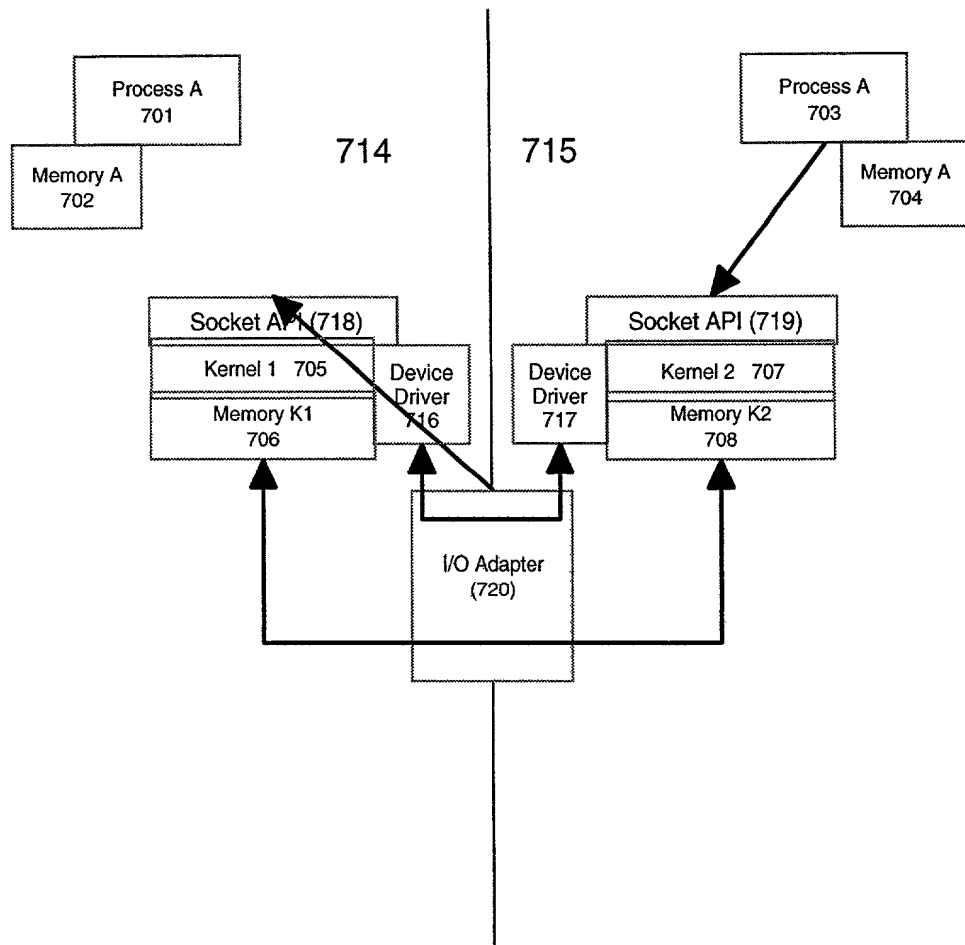
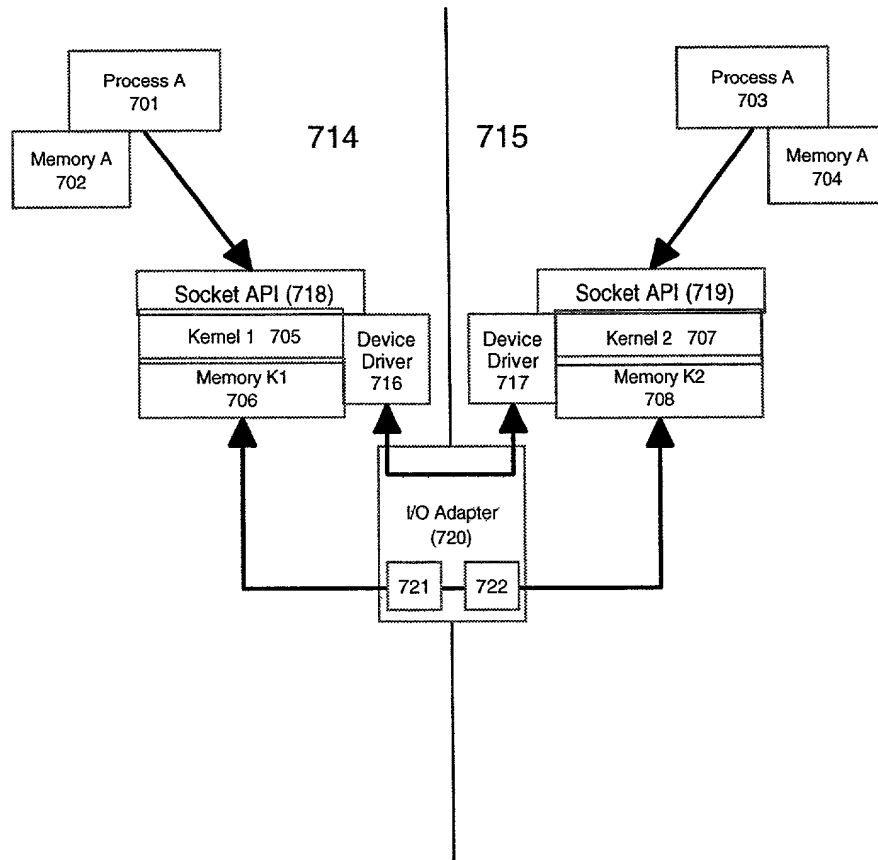


Fig 4

**Fig 5**

**Fig 6**

**Fig 7A**



The Prior Art
Fig 7B

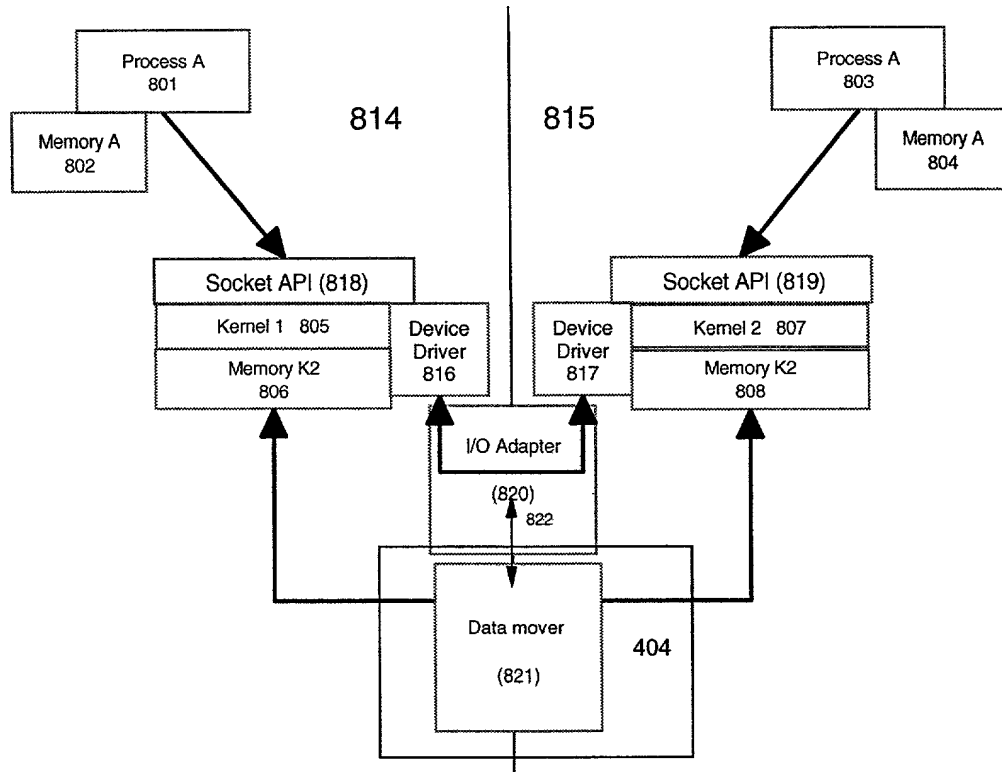
**Fig 8**

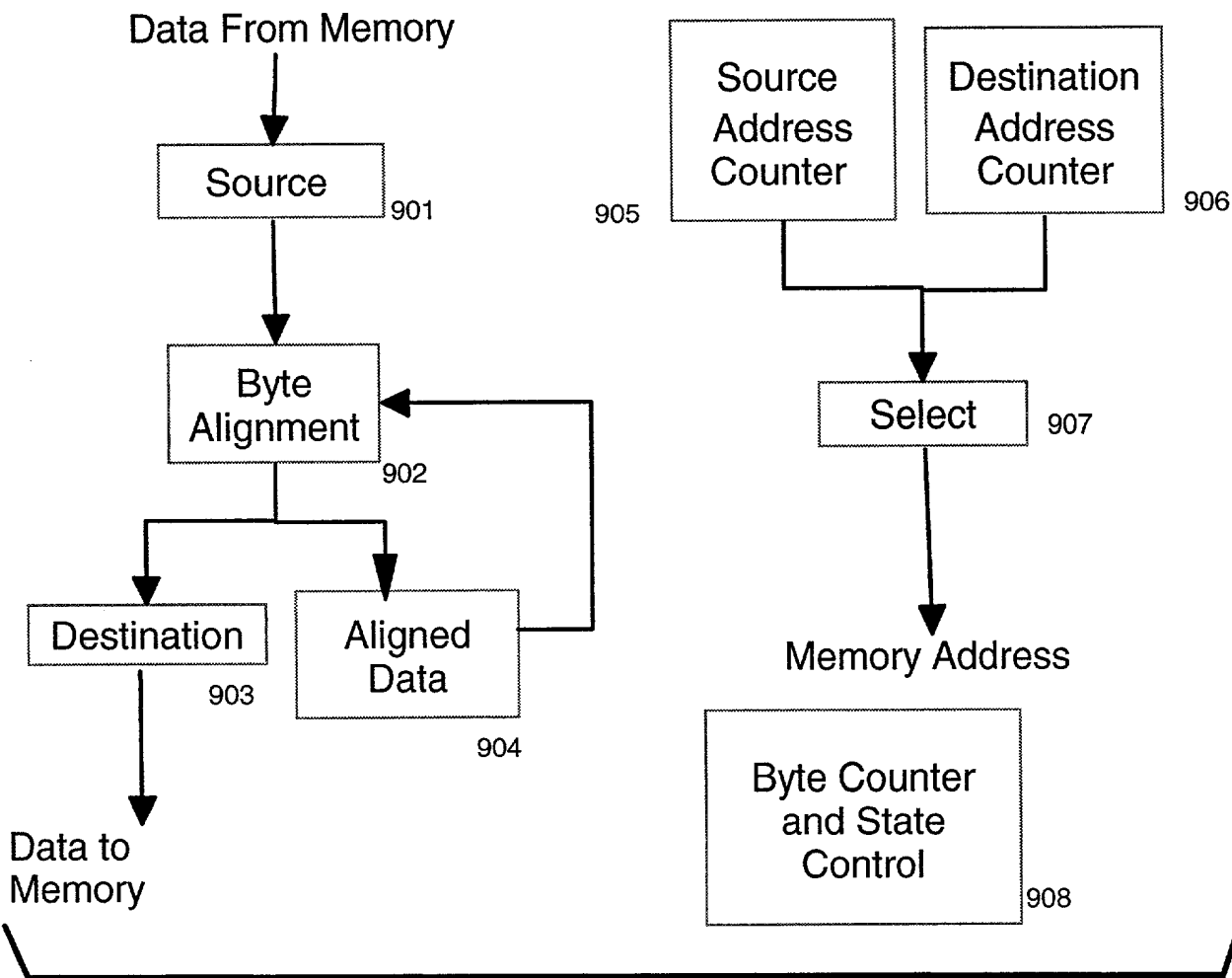
Fig 9

Fig 10

1000

| | | | |
|------|-------|-----------------|--------|
| MVXL | Count | Destinatio n | Source |
|------|-------|-----------------|--------|

MVXL moves the number of bytes specified by the count register from the physical address specified by the source register to the physical address specified by the destination register. The instruction is privileged.

(MVCL performs the same function between virtual addresses.) Here the Device Driver loads the register with physical rather than virtual addresses allowing cross partition data movement.

Fig 11

1101. User calls Device Driver

- Supplies
 - Source Network ID
 - Source Offset
 - Destination Network ID

1102. Device driver transfers addresses to Adapter

1103. Adapter Translates Addresses

- Looks up Physical Base addresses from ID's (Table Lookup)
- Obtains Lock and current Destination Offset
- Adds offsets
- Checks bounds

1104. Adapter loads count and addresses in registers

1105. Adapter executes Data Move

1106. Adapter Frees Lock

1107. Adapter notifies device Driver which "Returns" to user

Fig 12

1201. User calls Device Driver

- Supplies
Source Network ID
Source Offset
Destination Network ID

1202. Device driver sends addresses to adapter

1203. Adapter Translates

- Looks up Physical Base addresses from ID's (Table Lookup)
- Obtains Lock and current Destination Offset*
- Adds offsets
- Checks bounds
- Returns Lock and Physical addresses to Device Driver

1204. Device Driver executes Data Move

1205. Device Driver Frees Lock

1206. Device Driver Returns

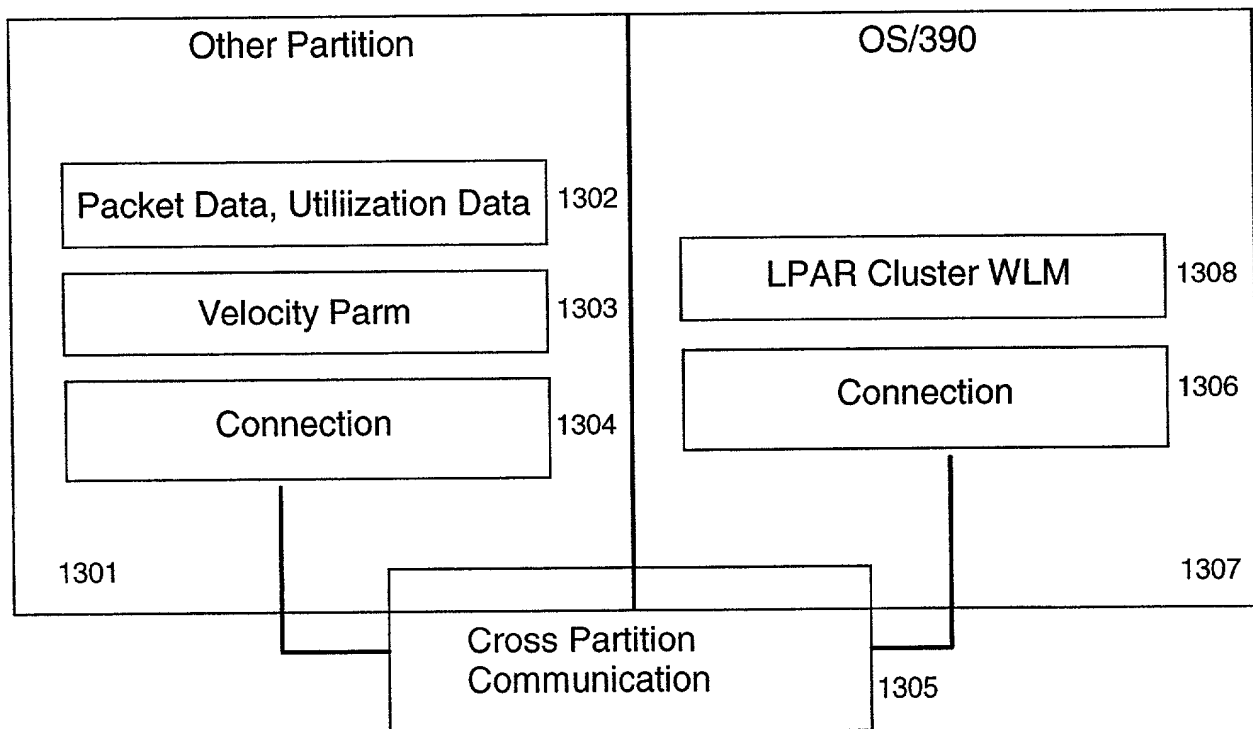
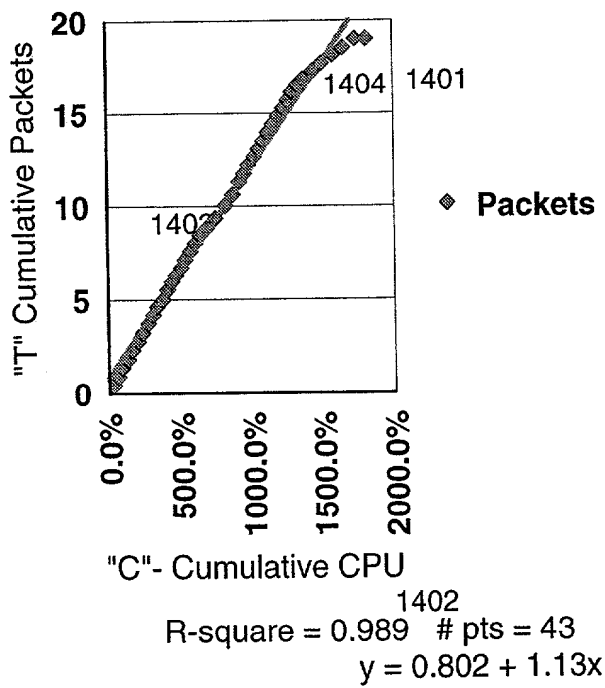
Fig 13

Fig 14

Cum Packets v CPU



$S = dT/dC$

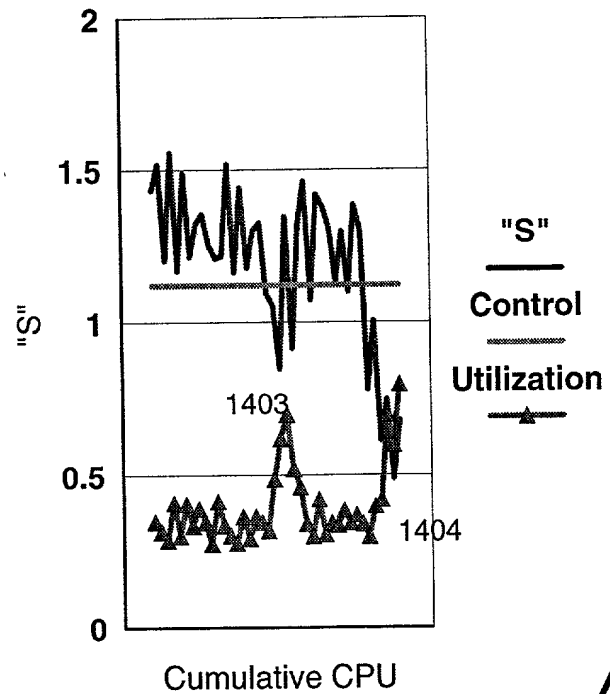


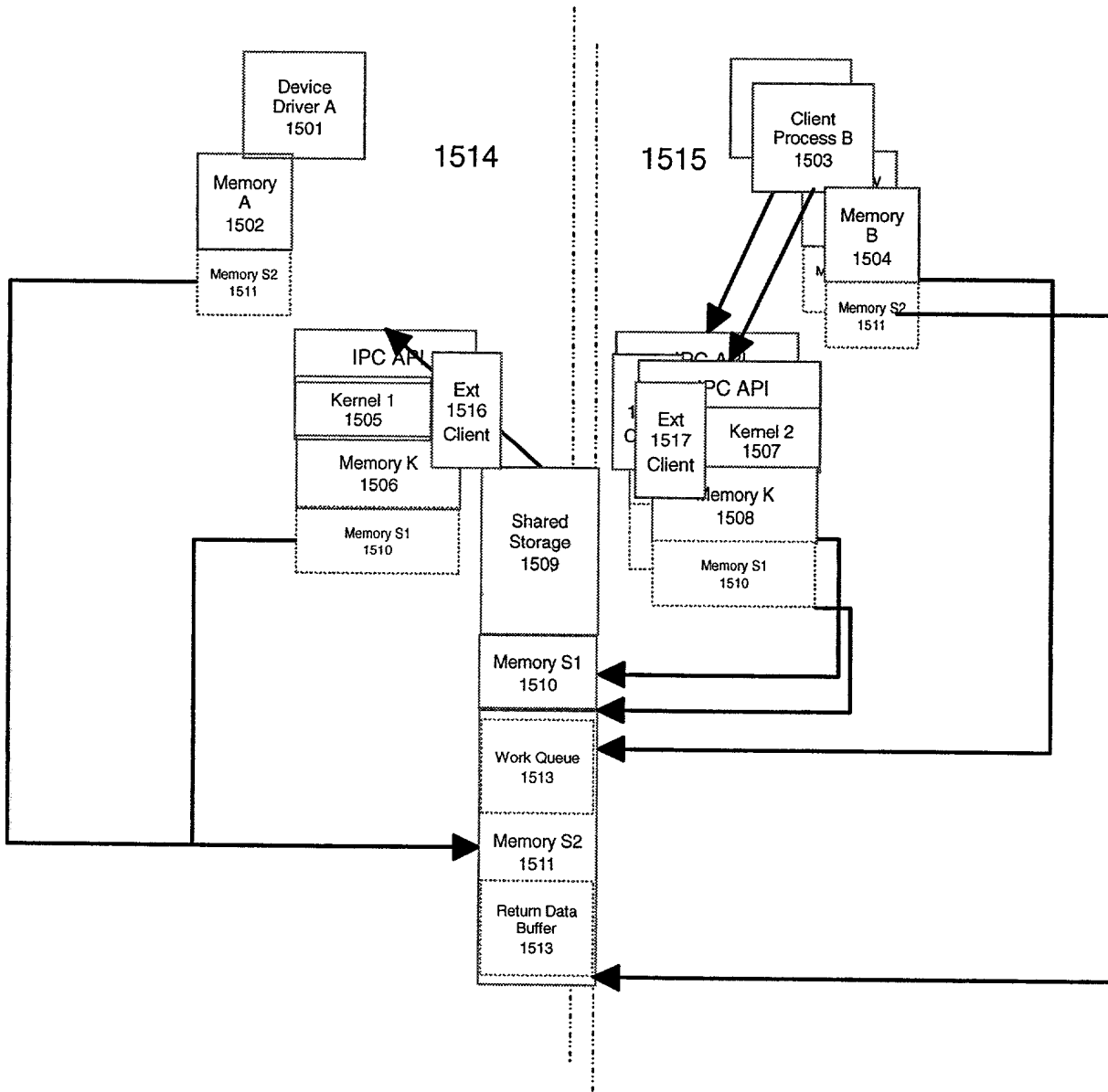
Fig 15

Fig 16